HEPACO Serious experience for serious times.					
2019 Coronavirus (2019-nCoV) Decontamination Standard Operating Guide					
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Note: This is a rapidly evolving situation and information will be updated as it becomes available. Any questions or concerns should be brought to your direct supervisor and HSE.

Purpose

To protect HEPACO, LLC (HEPACO) employees from exposures to blood and other potentially infectious materials contaminated by 2019-nCoV and communicate decontamination procedures.

Scope

This program is intended to cover the HEPACO employees who could be "reasonably anticipated" as the result of performing their job duties to have contact with blood and other potentially infectious materials or surfaces. Training shall be conducted for HEPACO field employees prior to their initial assignment and annually (within 1 year) thereafter.

The exact way the virus is spread is not fully known. With similar coronaviruses (MERS and SARS) person-to-person spread is thought to have happened mainly via respiratory droplets produced when an infected person coughs or sneezes, similar to how influenza and other viruses that cause respiratory illness spread. There also may be some spread when a person touches a surface or object that has virus on it and then touches his or her own mouth, nose, or possibly their eyes. Spread of SARS and MERS between people has generally occurred between close contacts. There is much more to learn about 2019-nCoV and investigations are ongoing.

Definitions

2019-nCoV, the 2019 novel coronavirus is a new virus that causes respiratory illness in people and can spread from person-to-person. This virus was first identified during an investigation into an outbreak in Wuhan, China.

COVID-2019 is the respiratory disease caused 2019-nCoV.

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans.

Occupational Exposure means reasonably anticipated broken skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from performance of the employee's duties.

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for

HIV, HBV, and Bloodborne pathogens.

Training

All HEPACO employees shall participate in a training program on the Bloodborne Pathogens Standard HEPACO procedures. Training shall be conducted for new employees prior to job assignments. Training shall be repeated and updated annually. A copy of the Bloodborne Pathogens Standard 29 CFR 1910.1030 is available from the HEPACO Corporate Health and Safety Officer. All HEPACO personnel shall have the following training when responding to any potentially infectious materials contaminated by 2019-nCoV:

- 40-hour HAZWOPER training in accordance with (29 CFR 1910.120)
- Current Fit Test
- Bloodborne Pathogen Training in accordance with (29 CFR 1910.1030)
- Respiratory Protection Training in accordance with (29 CFR 1910.134)
- Part of HEPACO Medical Monitoring Program in accordance with (29 CFR 1910.120)

Personal Protective Equipment (PPE)

Universal Precautions shall be followed at all times to prevent contact with blood or other potentially infectious materials including signage, labels, and training.

All project specific PPE will be outlined in the Site-Specific Health and Safety Plan. Recommended PPE is as follows:

- NIOSH-approved full-face air-purifying respirator (APR) with P-100 cartridges
- Chemical protective clothing (poly-coated Tyvek or Saranex)
- PVC steel-toed work boots or latex boot covers
- Nitrile inner gloves
- Nitrile outer gloves
- Taped cuffs and taped ankles

- HEPACO will select and provide workers with appropriate PPE to prevent exposure to 2019 Novel Coronavirus (2019-nCoV), blood or body fluids that may contain 2019-nCoV, and other sources of infectious material.
- While the CDC currently recommends standard, contact and airborne precautions, the role of large-particle droplets in transmission of the virus has not been determined. Airborne precautions typically afford a higher level of protection than those for large-particle droplets; but, airborne precautions may not afford adequate protection of skin surfaces if 2019-nCoV is transmissible via large-particle droplets. At this time, OSHA's PPE recommendations include additional protection of skin surfaces to ensure protection against large particle droplets.
- Acceptable respiratory protection devices for protection against 2019-nCoV include a properly fit-tested, NIOSH-approved full-face air-purifying respirator (APR). Work tasks, including cleaning and decontamination activities, that involve an increase in moisture and spray may adversely affect disposable N95 respirators and certain other respirators. In such instances, a supplied-air respirator (SAR) may be an alternative to improve worker protection. Loose-fitting PAPRs and SARs may also improve worker comfort when wearing respirators for long periods.

- All HEPACO personnel will meet the OSHA Respiratory Protection standard (29 CFR 1910.134) which requires medical clearance and fit testing to ensure appropriate respiratory selection and use. All HEPACO personnel will have a current fit test and will be clean shaven in accordance with HEPACO's respiratory protection program.
- When the potential exists for exposure to blood or other potentially infectious materials, workers shall use PPE required by the Bloodborne Pathogens standard (29 CFR 1910.1030) and outlined in HEPACO's Bloodborne Pathogen program.
- Eating, drinking, smoking, handling of contact lenses, etc. shall not be permitted in work areas where there is reasonable likelihood of exposure to contaminated materials.

Cleaning & Disinfection

- Clean all "high-touch" surfaces, such as counters, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables as well as floor and any horizontal surface. Also, clean any surfaces that may have blood, body fluids and/or secretions or excretions on them.
- Decontamination will be completed using either a diluted household bleach solution or EPA-registered chemical germicides that meet EPA's criteria for use against SARS-CoV-2. A 1:10 dilution of bleach (~6,000 ppm) or 1.5 cups of standard bleach in a gallon of water is recommended. Household bleach is approximately 6% sodium hypochlorite.
- Commercial grade bleach (10%-12.5% sodium hypochlorite) is stronger than household bleach and should be diluted accordingly. 0.75 cups in a gallon of water is ~6,000 ppm.
- A ~6,000 ppm bleach solution has a shelf life of approximately 24 hours.
- Contact time on any surface should be in accordance with manufacturer recommendation or at least two minutes.
- The CDC advises the use of EPA-registered chemical germicides that meet EPA's criteria for use against SARS-CoV-2, the cause of COVID-19. https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2

Fogging/Misting/Spraying Operations

- In some decontamination events, a fogger, mister or sprayer may be used to assist in disinfection.
- During fogging/misting/spraying operations, a team will systematically apply solution to all "high touch" surfaces including desks, desk drawers, filing cabinets, shelves, door handles, restrooms and all other commonly touched surfaces. The applied fog/mist/spray will remain in contact with surfaces as recommended by the manufacturer and/or EPA.
- Upon completion of fogging/misting/spraying, all surfaces will be wiped down utilizing rags and containerized for proper handling and disposal.

Food Grade Sanitizer

- In some decontamination events, a food grade sanitizer may be required in order to protect sensitive food grade products or food grade equipment.
- Decontamination teams should work with client/facility to ensure that both EPA's criteria for use against SARS-CoV-2 and FDA requirements are met when selecting a sanitizer.
- FDA approved sanitizers are outlined in 21CFR178.1010 https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=178.1010
- When cross referencing EPA's criteria for use against SARS-CoV-2 and FDA requirements when selecting a sanitizer, the solution will likely be either a hydrogen peroxide-based solution or sodium hypochlorite solution. Special attention should be paid to the concentration.

An example framework for performing decontamination activities at a food grade facility is as follows. HEPACO will verify specifics with client/facility prior to commencing any decontamination related activities.

- HEPACO will engage the facility and client Quality Manager/Product Stewardship Coordinator in the cleaning/sanitizing process.
- HEPACO will meet facility and client requirements on the following Good Manufacturing Practices (GMPs) before conducting any decontamination/sanitizing operations.
- Packaging products shall be treated as if they were food. Product must be removed from the area that will be decontaminated/sanitized and/or be carefully protected to prevent contamination.
- Product Label instructions must be followed (EPA label).
- Review EPA List N (List N: Products with Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2) to verify sanitizer effectiveness, EPA Registration Number, required contact time, etc. . .
- Disinfectant (i.e. chlorine bleach dilution) as an NSF D1 approved cleaner: All surfaces that will contact packaging after sanitizing will need to be rinsed with clean potable water.
- Disinfectant (i.e. chlorine bleach dilution) as an NSF D2 approved cleaner: All "surfaces are adequately drained before contact with food (packaging) so little or no residue remains which can adulterate or have a deleterious effect on edible products", which are packaged in our product.
- Disinfectant (i.e. chlorine bleach dilution) and application should comply with FDA regulations 21 CFR 178.1010 - INDIRECT FOOD ADDITIVES: ADJUVANTS, PRODUCTION AIDS, AND SANITIZERS
- Surfaces that are not expected to contact the packaging product do not need to be rinsed with water.
- Disinfectant (i.e. chlorine bleach dilution) should not be applied directly to packaging products or its related shipping packaging (pallets, shrink wrap, cases, tape, etc.)
- In general, surfaces that will contact packaging should be rinsed (via NSF D1 specification). However, client/facility can conduct a hazard analysis/risk assessment to determine if rinsing is unnecessary (via NSF D2 specification).
- Packaging products and/or its related shipping packaging (pallets, shrink wrap, cases, tape, etc.) will either be decontaminated/sanitized using other approved methods (if identified) or quarantined for a specified time.

Waste

All waste generated during decontamination of a suspected 2019-nCoV should be treated in accordance will any federal, state and local waste regulations

- Worker protection from exposure to biological agents, including 2019-nCoV is essential when work tasks involve handling, treatment, transport, and disposal of medical, laboratory and other potentially contaminated waste. Mishandled, contaminated waste may pose a risk to workers.
- Decontamination related waste materials cleaned via guidance from the CDC in most cases are not considered infectious waste under federal law since decontamination related waste materials are typically not derived from the treatment of a COVID-19 patient or medical facility.
- Various facilities accept decontamination related waste materials as non-hazardous, decontamination debris for incineration.
- A characterization form/profile specific for COVID-19 decontamination materials should be completed in accordance with facility requirements and proper CDC decontamination procedures should be followed.

- State requirements need to be reviewed in line with this guidance to ensure all requirements are met. This should be verified during profiling.
- Client requirements should also be verified prior to disposal.

An example profile for a decontamination event using 1:10 bleach solution per CDC instructions, generating non-infectious contaminated rags/wipes and PPE for disposal is listed below.

INC16	**Light Debris (rags pads, poly, PPE, wood) for Incineration, or bailing & incineration (<250 pounds)**	Maximum weight 250 pounds (if billed by the drum) No free liquid No large metal pieces No cyanides or sulfides No air or water reactives No activated carbon or charcoal including filters Material must be dumpable/processable No pesticides EX: Hazardous rags, absorbents, PPE, poly, plastic, wood, cardboard, small metal pieces

- HEPACO personnel will follow applicable waste disposal requirements for all waste, including packaging requirements found in OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030). Additionally, Hepaco personnel will comply with the U.S. Department of Transportation's Hazardous Materials Regulations (49 CFR Part 172) if transporting waste off-site for treatment and disposal. Any applicable state and local requirements will also apply.
- Sharps containers shall be provided when necessary in any area where sharp instruments or needles will be used or cleaned up. Needles shall not be bent, capped, or sheared but shall be deposited in sharps containers. Sharps containers are red, leak proof, hard plastic, and puncture resistant. When filled they shall be disposed of by an approved medical waste transporter and disposer.

Decontamination

Personnel Decontamination	
Step 1	Deposit equipment used on site on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross-contamination.
Step 2	Boot Cover & Outer Glove Wash & Removal: Scrub, spray or wipe outer boot covers and gloves with decon solution or detergent and water. Rinse off decon solution. Remove tape around boots and gloves. Deposit tape, boot covers, and outer gloves in waste container.
Step 3	Wash Outer Garments: Wash chemical-resistant suit, gloves and safety boots. Scrub, spray or wipe with decon solution.
Step 4	Rinse Outer Garments: Rinse off decon solution.
Step 5	Remove Outer Garments: With assistance of helper, remove chemical-protective suit. Deposit in waste container with plastic liner.
Step 6	Boot Drop: Remove washed & rinsed chemical-resistant boots.
Step 7	Respirator Facepiece Drop, Wash, & Rinse. Cartridges should be placed in waste container.
Step 8	Inner Glove Drop: Remove inner gloves. Deposit in waste container.
Step 9	Move to designated personal hygiene station and wash with soap and water or hand sanitizer. Redress in clean clothes if needed.

Reporting Illness and General Practices to Reduce Transmission

- All HEPACO personnel will follow client requirements surrounding COVID-2019 reporting when working on client site or performing client related services.
- At the beginning of each shift, each worker will self-certify to their supervisor that they:
    - Do not have a fever and are not experiencing any respiratory symptoms
    - No members of their household or visitors to their household have travelled to any country which has resulted in a government entity instructing them to self-quarantine within the past 14 days
    - No members of their household or anyone they have been in close contact with in the last 14 days is experiencing flu-like symptoms, as listed above
    - If any illness is suspected, employee should follow HEPACO reporting protocol and notify immediate supervisor and HSE.
- All supervisors and all HEPACO employees should be aware of the symptoms of 2019-nCoV and should review routinely.
- Social Distancing should be practiced at all times. Employees should be at least 6 feet from others & refrain from shaking hands.
- Per CDC recommendations, HEPACO employees should wear face coverings in settings where other social distancing measures are difficult to maintain (vehicles, working on equipment, etc.) **especially** in areas of significant community-based transmission. If there are state or local requirements in place, employees should adhere to any and all requirements. Face coverings are not to take the place of NIOSH approved respirators during decontamination activities.
- Employees should minimize touching face (eyes, mouth, nose) and should frequently wash hands and/or use hand sanitizer.
- Employees should cover mouth & nose with tissue or sleeve (not hands) when coughing.